CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE

May 6, 2003

S. 791
Reliable Fuels Act

As ordered reported by the Senate Committee on Environment and Public Works on April 9, 2003

SUMMARY

Under S. 791, methyl tertiary butyl ether (known as MTBE), a widely used motor fuel additive, would be banned four years after enactment of the bill—except individual states could choose to continue to allow the use of MTBE by notifying the administrator of the Environmental Protection Agency (EPA). The bill would eliminate a requirement under current law for motor fuel to contain oxygenates and would require that all motor fuels sold by a refiner, blender, or importer contain specified amounts of renewable fuel. This renewable fuel standard would largely be met by adding ethanol to gasoline. S. 791 also would authorize funding for several grant programs to support research and development of renewable fuels technology. Funding also would be authorized for rulemaking, studies, and reports to the Congress associated with the renewable fuels program.

The bill's mandate to use renewable fuels would affect spending on farm support programs and also would affect motor fuels tax receipts. CBO estimates that enacting S. 791 would increase direct spending by about $170 million over fiscal years 2005 and 2006 but in total would reduce direct spending by about $2 billion over the 2005-2013 period. In addition, CBO estimates that the bill would increase revenues by about $130 million over the 2005-2008 period and decrease revenues by $2.3 billion over the 2005-2013 period. (We estimate no inpact on direct spending or revenues before 2005.) Finally, we estimate that implementing S. 791 would cost about $250 million in 2004 and $2.3 billion over the 2004-2008 period, subject to appropriation of the necessary amounts.

S. 791 contains an intergovernmental mandate as defined in the Unfunded Mandates Reform Act (UMRA). However, the mandate would impose no duty on state, local, or tribal governments that would result in additional spending. Therefore, the threshold established in UMRA ($59 million in 2003, adjusted annually for inflation) would not be exceeded.

S. 791 contains several private-sector mandates as defined in UMRA. While CBO cannot estimate the aggregate cost of all the mandates contained in the bill, we expect that the total cost of private-sector mandates would exceed the annual threshold established in UMRA ($117 million in 2003, adjusted annually for inflation). That conclusion is primarily based upon our analysis of the renewable fuel standard which would impose substantial costs on the motor fuels industry in 2009, the fifth year the standard would be in effect.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 791 is shown in Table 1. The costs of this legislation fall within budget functions 270 (energy), 300 (natural resources and environment), 350 (agriculture), 370 (commerce and housing credit), and 950 (undistributed offsetting receipts).

BASIS OF ESTIMATE

For this estimate, CBO assumes that the bill will be enacted by the end of fiscal year 2003, that the full amounts authorized will be appropriated for each fiscal year, and that spending will follow historical rates for ongoing or similar activities.

Spending Subject to Appropriation

S. 791 contains several provisions that specify amounts authorized to be appropriated for researching methods to improve the production of renewable fuels and amounts to correct contamination caused by MTBE. The bill also would authorize unspecified amounts to be appropriated for the promulgation of new rules, studies, and reports to the Congress associated with the new renewable fuels standard established under the bill. Assuming appropriation of the necessary amounts, CBO estimates that implementing these provisions would cost $249 million in 2004 and $2.3 billion over the 2004-2008 period. Major components of this estimate are described below.

TABLE 1. ESTIMATED BUDGETARY IMPACT OF S. 791

	By Fiscal Year, in Millions of Dollars				
	2004	2005	2006	2007	2008
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Grants for MTBE Producers					
Authorization Level	250	250	250	250	0
Estimated Outlays	100	213	250	250	150
Grants to Producers of Cellulosic Biomass Ethanol					
Authorization Level	100	250	400	0	0
Estimated Outlays	45	148	283	183	73
Center for Biomass-Based Energy					
Authorization Level	4	4	4	0	0
Estimated Outlays	3	4	4	1	0
Grants for Renewable Fuel Production					
Authorization Level	25	25	25	25	25
Estimated Outlays	11	20	24	25	25
LUST Program					
Authorization Level	280	30	30	30	30
Estimated Outlays	70	106	88	54	43
Loan Guarantees					
Estimated Authorization Level	50	0	50	0	50
Estimated Outlays	10	30	20	30	20
Clean Air Act Provisions					
Estimated Authorization Level	10	10	7	11	10
Estimated Outlays	10	10	7	11	10
Total Proposed Changes					
Estimated Authorization Level	719	569	766	316	115
Estimate Outlays	249	531	676	554	321
CHANGES IN DIRECT SPENDING					
Estimated Budget Authority	0	81	90	-9	-122
Estimated Outlays	0	81	90	-9	-122
CHANGES IN REVENUES					
Estimated Revenues	0	82	47	-42	-130

NOTE: LUST = Leaking Underground Storage Tanks.

Grants to MTBE Producers. S. 791 would authorize the appropriation of $1 billion to DOE over the 2004-2007 period for grants to assist producers of MTBE to convert facilities to produce alternative fuel additives instead of MTBE.

Grants to Producers of Cellulosic Biomass Ethanol. S. 791 would authorize the appropriation of $750 million to the Department of Energy (DOE) over the 2004-2006 period for grants to producers of cellulosic biomass ethanol (ethanol derived from such materials as plants, grasses, fibers, municipal solid waste, and wood residues) to build production facilities.

Center for Biomass-Based Energy. This legislation would authorize the appropriation of $12 million over the 2004-2006 period to establish a resource center at the University of Mississippi and the University of Oklahoma for the purpose of developing new methods for the production of ethanol.

Research and Development Grants for Renewable Fuel Production. S. 791 would authorize the appropriation of $125 million to EPA over the 2004-2008 period for grants to certain academic institutions and consortia (consisting of academic institutions, industry, state government agencies, or local government agencies) for research and development related to technologies for the production of renewable fuel.

LUST Program. This legislation would authorize the appropriation of $400 million over the 2004-2008 period from EPA's Leaking Underground Storage Tank (LUST) Trust Fund. This funding would be used for grants to states to correct contamination caused by MTBE and for enforcement and inspection activities related to LUST sites.

Loan Guarantees. S. 791 would authorize DOE to issue loan guarantees to help finance the construction of facilities for the processing and conversion of municipal solid waste into fuel ethanol and other commercial by-products. The development of such facilities poses some risk mainly because the technology that would be used to convert municipal solid waste into fuel ethanol is new and is not well proven. Construction of the first-of-its-kind plant for this new manufacturing process is expected to begin sometime before the end of 2003 at a site in Middletown, New York.

For this estimate, we expect that such plants would be debt-financed and sponsors would recover costs through the sale of ethanol and other recyclable materials. The projects also would rely heavily on revenues from "tipping fees" (i.e., those fees charged by the plant to accept municipal solid waste). According to industry experts, the solid waste industry is highly competitive and tipping fees fluctuate over time. The prices for ethanol and recycled glass, metal, and paper also have histories of fluctuating widely. These factors pose some additional credit risk for such a project.

Under credit reform procedures, funds must be appropriated in advance to cover the subsidy cost of loan guarantees, measured on a present-value basis. Because of the significant level of risk associated with this type of project, the subsidy rate costs of such loan guarantees could vary widely. At worst, the government could absorb all of the risk, effectively converting the loan guarantee into a grant. S. 791 does not impose any limit on the amount of loan guarantees that could be made by DOE. Because the technology for converting municipal solid waste into fuel ethanol is very new and unproven, CBO estimates that over the next five years, DOE would probably provide loan guarantees for three projects with a total construction cost of about $300 million. In addition, based on information from DOE, CBO assumes that the department would guarantee up to 50 percent of a project's total investment and that DOE would only consider projects with a financial outlook at least equivalent to those of bonds rated CCC by companies like Standard and Poors and Moodys. Projects with this rating typically have a cumulative default risk of more than 50 percent. Under these assumptions, CBO estimates that this provision would result in loans being guaranteed with about a 50 percent subsidy, requiring appropriations of about $150 million over the 2004-2008 period.

Motor Fuels and Clean Air Act Provisions. This legislation would require EPA to promulgate new rules, prepare studies for the Congress, and implement new programs related to the renewable content of motor fuels and air pollution resulting from the use of motor fuels. CBO estimates that implementing these provisions in S. 791 would cost $10 million in 2004 and $48 million over the 2004-2008 period. Of the $48 million, more than half would be for EPA's costs to enforce motor fuel standards. Specifically, the bill would require that EPA promulgate rules that require motor fuels sold by a refiner, blender, or importer contain specified amounts of renewable fuels. Under the bill, by 2012, gasoline sold to consumers would be required to include, on an annual average basis, 5 billion gallons of renewable fuel.

Additionally, the bill would require the EPA to conduct annual surveys on market shares of various renewable fuels starting in December 2006. Such a survey could cost as much as $4 million annually if EPA were to undertake a survey of all retail gasoline sales. This legislation also would require EPA, at the request of a state, to enforce the state-adopted regulations concerning fuels requirements. State fuels programs can vary. Some programs are seasonal, while others are more complex where many fuel parameters are regulated. Specifically, EPA staff would be required to travel to the affected cities, take samples, review records, and conduct audits of refiners and importers. Based on information from EPA, CBO estimates that implementing this provision would require the equivalent of an additional 22 staff, funding for their travel expenses, and funding associated with laboratory sampling and technical analysis, resulting in a cost of $5 million annually and $25 million over the next five years.

S. 791 also includes several other provisions that would require new studies, reports to the Congress, and activities related to banning the use of MTBE in motor fuels to be prepared by DOE and the Federal Trade Commission.

Direct Spending and Revenues

CBO estimates that enacting S. 791 would decrease direct spending by about $2 billion over the next 10 years and decrease federal revenues by about $2.3 billion over the same period. The bill's impact on direct spending and revenues over the 2004-2013 period is shown in Table 2.

TABLE 2. ESTIMATED IMPACT OF S. 791 ON DIRECT SPENDING AND REVENUES

	By Fiscal Year, in Millions of Dollars									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CHANGES IN DIRECT SPENDING AND REVENUES										
Estimated Budget Authority	0	81	90	-9	-122	-276	-359	-434	-477	-489
Estimated Outlays	0	81	90	-9	-122	-276	-359	-434	-477	-489
Estimated Revenues	0	82	47	-42	-130	-247	-371	-497	-579	-603

Renewable Fuels Mandate and Agriculture Support Programs. The bill's mandate to increase the renewable content of motor fuels would have an impact of federal spending for farm support programs and would change the amounts collected from federal motor fuels taxes.

Section 101 of the bill would require that motor fuels sold by a refiner, blender, or importer contain specified amounts of renewable fuel. The required volume of renewable fuel would start at 2.6 billion gallons in 2005 and escalate to 5 billion gallons by 2012. The bill also would amend the Clean Air Act to eliminate the requirement for gasoline that is sold in certain regions to contain 2 percent oxygen by weight. This provision would lower demand for gasoline oxygenates, including ethanol. In contrast, because S. 791 also would ban the use of MTBE four years after enactment, the demand for ethanol could increase. However, under S. 791, any state may authorize the use of MTBE by simply notifying EPA. Under this construction, it is possible that MTBE use would not be affected by the ban. Consequently, CBO has not explicitly included the possible effects of a MTBE ban on the demand for ethanol, but the net impact of the other provisions in section 101 would increase ethanol use over the 2004-2013 period. CBO expects that most of the fuel produced to meet the requirements under the act would be corn-based ethanol.

Because ethanol is primarily derived from corn, demand for corn would fall or rise with the demand for ethanol. CBO expects that lower prices for corn during 2005 and 2006 and higher prices for corn during the 2007-2013 period would result. Accordingly, the costs of farm price and income supports would slightly increase in the first few years but fall in the later years of the estimate period. On net, CBO estimates that spending for farm price and income supports would decline by about $2 billion over the 2005-2013 period due to the elimination of the oxygenate requirement for motor fuels and the ethanol mandate.

Renewable Fuels Mandate and Revenues. Because ethanol-blended fuels are taxed at a lower rate than gasoline, receipts to the Highway Trust Fund from motor fuels would change when ethanol use changes. We estimate that enacting this provision would increase revenues in 2005 and 2006 because the mandated level of ethanol use under the bill would be less than CBO's projection of ethanol use under current law. Under current law, we expect ethanol use to grow as the demand for gasoline oxygenates increases. After 2006, the amount of ethanol use mandated under the bill would exceed the projections in our current-law baseline—leading to a loss of revenues. We estimate that the provision would increase net federal revenues by $129 million over the 2005-2006 period and reduce them by $2.3 billion over the 2005-2013 period.

ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS

S. 791 would shield manufacturers of gasoline from liability claims based on the renewable content of their fuel. Because this provision would limit the application of state law, it constitutes an intergovernmental mandate as defined in UMRA. However, the mandate would impose no duty on states that would result in additional spending. Therefore, the threshold established in UMRA ($59 million in 2003, adjusted annually for inflation) would not be exceeded.

Other provisions of the bill contain no intergovernmental mandates and would impose no direct costs on state, local, or tribal governments. States with EPA approval to enforce clean air standards for motor fuels would have to comply with any new requirements, but they would do so voluntarily. In general, the bill would benefit states by authorizing grants and amounts from the LUST Trust Fund for a variety of activities.

ESTIMATED IMPACT ON THE PRIVATE SECTOR

S. 791 contains several private-sector mandates as defined in UMRA. While CBO cannot estimate the aggregate cost of all the mandates contained in the bill, we expect that the total cost of private-sector mandates would exceed the annual threshold established in UMRA ($117 million in 2003, adjusted annually for inflation). That conclusion is primarily based upon our analysis of the renewable fuel standard established under a renewable fuel program, which would impose substantial costs on the motor fuels industry in 2009, the fifth year the standard would be in effect. Numerous other private-sector mandates would be imposed by additional requirements in the renewable fuel program, a ban on the use of MTBE in motor fuels, and through other fuel requirements.

The bill also would authorize an appropriation of $1 billion to the Department of Energy over the 2004-2007 period for grants to assist manufacturers of MTBE to convert facilities to produce fuel additives that would substitute for MTBE.

Renewable Fuel Program

Renewable Fuels Standard. Section 101 would require domestic refiners, blenders, and importers of gasoline to ensure that gasoline sold or dispensed to consumers in the contiguous United States contains a minimum volume of renewable fuels. The required volume of renewable fuel would start at 2.6 billion gallons in 2005 and increase to 5 billion gallons by 2012. CBO expects that the renewable fuel requirement would be met in 2005 and 2006 without additional costs to the motor fuels industry. The industry would begin to experience additional costs in 2007 as it begins to blend or purchase greater amounts of gasoline containing ethanol or other renewable fuel than it would in the absence of such a standard. In the fifth year the standard would be in effect, 2009, CBO estimates that the direct costs of the renewable fuel requirement would rise to more than $200 million, an amount which would exceed UMRA's annual threshold for private-sector mandates.

Seasonal Variation in Renewable Fuel Use. Section 101 also would direct the Energy Information Administration (EIA) to determine if there are excessive seasonal variations in the amount of renewable fuel blended into gasoline. Refiners might have an incentive to use more of the annual requirement for renewable fuel (mostly ethanol) in the winter months, when evaporative emissions from gasoline are less of a concern. Sharp seasonal changes in the demand for ethanol could lead to large swings in ethanol and gasoline prices. If EIA determines that there are excessive seasonal fluctuations, EPA would impose regulations requiring that at least 35 percent of the renewable fuel standard be blended into gasoline in summer months and another 35 percent be blended in winter months. At this time, neither EPA nor the motor fuels industry anticipate that such requirements would be necessary. In the event that a determination by EIA triggers additional EPA regulations, the duty to comply with those regulations would constitute a private-sector mandate. Information provided by industry sources indicated that compliance would not be expensive.

Eliminate the Ethanol Waiver. Section 101 also would authorize states to apply for an exclusion from a waiver that under current law allows gasoline blended with ethanol to have higher evaporative properties than gasoline blended with other fuel additives. Gasoline blends containing ethanol evaporate more readily at a given temperature, contributing to smog formation. States that presently use large amounts of ethanol, mostly located in the Midwest, would probably not request an exclusion from the waiver. States that have trouble meeting air quality requirements (several states in the Northeast) would likely request an exclusion. To the extent that gasoline blended with ethanol is currently sold in those states, the exclusion would increase the cost of an existing private-sector mandate on refiners who sell in the state. Refiners would incur costs as they reduce their use of other highly evaporative blendstocks (such as butane). Because we cannot predict what states would opt out of the waiver, CBO has no basis to quantify those costs; but they are not likely to be large.

Recordkeeping and Reporting Requirements. As part of the renewable fuel program, sections 102 and 103 would require both EPA and DOE to collect data and issue reports on the amount of renewable fuel blending and the associated impacts of that blending. Information provided by EPA and the motor fuels industry indicated that the new requirements would be folded into existing data collection procedures and that the incremental cost of compliance would be low.

Safe Harbor. The renewable fuel standard required by the bill would substantially increase the amount of renewable fuel that is blended into gasoline. Section 101 would shield motor fuel manufacturers and other persons from liability for a defect in design or manufacture of a motor vehicle fuel containing renewable fuel. That protection would be in effect as long as the fuel is in compliance with other applicable federal requirements. The provision would impose a private-sector mandate by limiting existing rights to seek compensation under current law. Effective on the date of enactment, the provision would have no impact on existing claims or court determinations or settlements. Because of the lack of information on both the number of claims that would be filed in the absence of this legislation, and the associated outcomes of those claims, CBO cannot determine the cost of this mandate.

MTBE Ban

Under the Clean Air Act Amendments of 1990, areas with poor air quality are required to add chemicals called "oxygenates" to gasoline as a means of reducing certain air pollution emissions. One of the most commonly used oxygenates is methyl tertiary butyl ether; about 200,000 barrels of MTBE are blended into gasoline each day in the United States. Roughly one-third of that amount is supplied to refiners by merchant producers and the rest is produced by the refiners themselves or imported. In recent years, concerns have been raised about the adverse effects on ground water supplies from MTBE that leaks from underground tanks, and 16 states have passed laws to either ban or reduce the local use of MTBE.

Section 203 would ban the use of MTBE in gasoline within four years of the bill's enactment. At the same time, the provision would allow any state to authorize the use of MTBE by simply notifying EPA. That is, a nationwide ban with states opting to continue use of MTBE may not be fundamentally different from the current situation in which states impose their own local bans. Therefore, it is possible that MTBE use would not be affected by the new ban. Moreover, CBO anticipates that the renewable fuels standard established in section 101 would, on its own, greatly reduce—if not totally eliminate—incentives to use MTBE.

CBO cannot determine in which states, if any, the federal MTBE ban would be more constraining than the renewable fuel standard and, therefore, cannot determine the cost of the mandate. In states where the federal ban would be more constraining, the ban could impose costs on refiners and merchant producers. Gasoline refiners would need to replace MTBE with higher-cost blendstocks, and merchant producers would likely convert their operations to the production of less-profitable blendstocks, such as alkylates or iso-octane. The bill would authorize federal transition grants to merchant producers to convert their facilities amounting to $1 billion over the 2004-2007 period.

Other Fuel Requirements

Increased Environmental and Public Health Testing. Section 205 would require fuel manufacturers to test their products regularly for any environmental and public health effects of the fuel or additive, as part of the registration process with the EPA. Under current law, such testing occurs at the discretion of the EPA Administrator. Based on information provided by the EPA on the most recent round of testing, CBO expects the cost of regular testing to be between $10 million and $20 million every five years, which is the period of time over which the EPA expects the testing to take place.

Anti-Backsliding Baseline. Section 204 would direct EPA to establish a more stringent baseline for toxic emissions from reformulated gasoline. The current baseline, which became effective in 2002, is refinery specific and is based on average 1998 through 2000 reformulated gasoline parameter values. The bill would establish a baseline that averages parameter values only from calendar years 1999 and 2000, meaning that reformulated gasoline will have to be slightly cleaner. According to EPA and the refining industry, the majority of the industry is already over-compliant with the current baseline. CBO does expect some refineries to experience increased costs in meeting the more stringent emission targets, but on the whole CBO does not expect the requirement to be expensive.

Water Quality Protection Authority. Section 203 would grant new authority to the EPA to regulate fuels and fuel additives to protect water quality. Presently, EPA has no intention to regulate any fuel or additive to protect water quality. Future regulation would be based upon environmental and public health testing. Since no information is available at this time about the substances that are likely to be regulated in the future, CBO cannot determine the cost of the mandate.

VOC Region Consolidation. Section 204 would consolidate the regional regulations that limit the emissions of volatile organic compounds (VOCs) from gasoline, effectively applying the more stringent standards for gasoline sold in the southern United States to that sold in the North. Meeting the more stringent standards would impose a private-sector mandate. While CBO expects that the mandate would raise the cost of producing gasoline for the Northern United States, we anticipate that refiners also would experience some savings because the cost of distributing gasoline would fall. Without more information about the magnitude of these offsetting effects, CBO cannot determine the net cost of the mandate.

State Opt-in to Reformulated Gasoline (RFG) Program. Section 207 would authorize states in the ozone transport region (several states in the Northeast) to ask EPA to apply the more stringent air emissions standards of the RFG program in areas that are already in attainment of air quality standards. CBO does not have information at this time on the areas to which RFG program requirements could apply, and therefore, cannot determine the cost of compliance.

PREVIOUS CBO ESTIMATES

On April 8, 2003, CBO transmitted a cost estimate for H.R. 6, a bill to enhance energy conservation and research and development, to provide for security and diversity in the energy supply for the American people, and for other purposes. That estimate provided direct spending and revenue effects for a renewable fuels mandate that differs from the mandate under S. 791. Under H.R. 6, CBO estimates that the renewable fuels mandate would increase net federal revenues by $290 million over the 2005-2008 period and reduce them by $284 million over the 2005-2013 period. In addition, direct spending would decline by $167 million over the 2005-2013 period. CBO also estimated that compliance with the renewable fuels standard in H.R. 6 would cost the motor fuels' industry roughly $140 million in 2009. The renewable fuel standard under S. 791 ramps up more quickly than the one under H.R. 6, which is primarily why CBO expects that the cost of compliance with the standard under S. 791 would be greater than that under H.R. 6.

On May 1, 2003, CBO transmitted a cost estimate for H.R. 1644, the Energy Policy Act of 2003, as ordered reported by the House Committee on Energy and Commerce on April 8, 2003. H.R. 1644 also contains a mandate for refiners, blenders, and importers to use renewable fuels. The amounts of renewable fuels that would be mandated by H.R. 1644 and S. 791 are different, and our cost estimates reflect those differences.

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